I claim:

1. A bumper system comprising:

a metal tubular beam with a center section having front, rear, top, and bottom walls;

an energy absorber including a rail having a rear surface with a rearwardly-facing C-shaped recess mateably receiving the tubular beam therein, the energy absorber being configured to crush and absorb impact energy prior to collapse of the tubular beam; and

mounts engaging a rear of the metal tubular beam.

2. The bumper system defined in claim 1, wherein the rear surface of the rail includes a pair of flanges that surround a rear surface of the metal tubular beam received within the rail, whereby the rail covers the front, rear, top and bottom walls of the center section of the metal tubular beam.

3. The bumper system defined in claim 1, wherein the energy absorber includes foam sections of material that cover at least three sides of the rearwardly-facing C-shaped recess.

4. The bumper system defined in claim 1, wherein the rearwardly-facing C-shaped recess defines a horizontal rail on the energy absorber.

5. The bumper system defined in claim 1, wherein the energy absorber includes structure adapted to support the headlight apparatus and further includes through-holes for passing light from the headlight apparatus.

6. The bumper system defined in claim 1, wherein the energy absorber includes corner sections forming at least one honeycomb-shaped structure for absorbing impact energy during a vehicle crash, the corner sections extending around and rearward of the ends of the beam.

7. The bumper system defined in claim 6, wherein the corner sections include a portion located proximate the mounts, the corner sections being configured to flex, engage and slide on a side of the mounts during a corner impact that is directed along a line angled with respect of a

length of the mounts, and being configured to engage and crush against the mounts during a front impact that is parallel a length of the mounts.

8. The bumper system defined in claim 7, wherein the corner sections of the energy absorber each include a flat top wall and reinforcing walls supporting the top wall adapted to structurally support fascia on the top wall covering the corner sections.

9. A bumper system comprising:

a metal tubular beam;

a polymeric energy absorber having a rear surface with a recess mateably receiving the tubular beam, the energy absorber being configured to crush and absorb impact energy prior to collapse of the tubular beam;

mounts engaging a rear of the metal tubular beam;

wherein the energy absorber includes enlarged structural corner sections that extend outboard of the mounts and outboard of outer ends of the beam for providing impact structure to a corner of the vehicle outboard of the beam and mounts; and

wherein the corner sections form at least one honeycomb-shaped structure for absorbing impact energy during a vehicle crash, the corner sections further providing a top surface configured to support a force placed thereon.

10. The bumper system defined in claim 9, wherein the corner sections include an apertured front wall, an apertured rear wall and reinforcing walls extending between the front wall and the rear wall.

11. The bumper system defined in claim 10, wherein the front wall and the rear wall are substantially vertical and the reinforcing walls are substantially horizontal.

12. The bumper system defined in claim 11, wherein the top surface is located on a topmost one of the reinforcing walls.

13. A bumper system comprising:

a metal tubular beam;

an energy absorber having a rear surface with a recess mateably receiving the tubular beam, the energy absorber being configured to crush and absorb impact energy prior to collapse of the tubular beam;

mounts engaging a rear of the metal tubular beam;

wherein the energy absorber includes enlarged structural corner sections that extend outboard of the mounts and outboard of outer ends of the beam for providing impact structure to a corner of the vehicle outboard of the beam and mounts; and

wherein the corner sections include a portion located proximate the mounts, the corner sections being configured to flex, engage and slide on a side of the mounts during a corner impact by an object directed along a line angled with respect of a length of the mounts, whereby the object bounces sideways off the corner section in a direction parallel to a longitudinal direction of the energy absorber upon the corner impact.

14. A bumper system comprising:

a metal beam with a center section;

an energy absorber including a rail having the beam therein, the energy absorber being configured to crush and absorb impact energy prior to collapse of the beam; and

mounts engaging a rear of the metal beam;

the energy absorber including a top section connected to a top portion of the rail and a bottom section connected to a bottom portion of the rail;

the top section having an upwardly angled top first segment extending from the rail and a forwardly extending top second segment extending from the first segment;

the bottom section having a downwardly angled bottom first segment extending from the rail and a forwardly extending bottom second segment extending from the first segment;

wherein the upwardly angled top first segment folds rearwardly over a top face of the rail during a front impact of the forwardly extending top second segment; and

wherein the downwardly angled bottom first segment folds rearwardly over a bottom face of the rail during a front impact of the forwardly extending bottom second segment.

15. The bumper system defined in claim 14, wherein the metal beam is tubular and includes front, rear, top, and bottom walls, and the rail has a rear surface with a recess mateably receiving the tubular beam therein.

16. The bumper system defined in claim 14, wherein the energy absorber includes a rail encapsulating the tubular beam.

17. The bumper system defined in claim 16, wherein the rail is U-shaped.

18. The bumper system defined in claim 17, wherein a front wall of the rail includes apertures therethrough.

19. A bumper system for a vehicle having a passenger compartment, comprising:

a tubular bumper beam that includes a center section, end sections, and bent interconnecting sections that interconnect each end section with an end of the center section, the center section being at least 25% of a length of the bumper beam and defining a longitudinal primary centerline, and the end sections being at least 15% of the length and each defining a secondary centerline that extends parallel the primary centerline;

an energy absorber with at least one recess shaped to receive a portion of the tubular bumper beam, the energy absorber being configured to crush and absorb impact energy prior to collapse of the tubular beam; and

mounts adapted for attachment to a vehicle and that are attached to the end sections, the secondary centerline being spaced horizontally from the primary centerline when in a vehicle-mounted position, with the center section being located partially between the mounts and closer to the passenger compartment than the end sections, the energy absorber including enlarged structural corner sections that extend outboard of the mounts and outboard of the outer ends of the beam for providing impact structure to a corner of the vehicle outboard of the beam and mounts.